

In re: Bastiaan Driehuys et al.

Serial No.: 09/804,369

Filed: March 12, 2001

Page 2

A.1

identifying the presence of at least one condition of blockage, restriction, abnormality, and substantially unobstructed free passage of the pulmonary circulation path.

A.2

(Amended) A method according to Claim 1, wherein the controlled injection rate is less than about 2 cc/s.

A.3

20. (Amended) A method according to Claim 1, further comprising:
providing a container configured to hold the first injectable quantity of polarized gaseous ¹²⁹Xe therein;
preparing the container to hold the first injectable quantity of polarized gaseous ¹²⁹Xe therein by introducing then expelling CO₂ from the container thereby leaving residual traces of CO₂ therein; and then
introducing the first quantity of polarized gaseous ¹²⁹Xe into the container prior to the step of injecting.

Please add the following new claims.

89. (New) A method according to Claim 1, wherein the first quantity of injectable polarized gaseous ¹²⁹Xe is formulated for *in vivo* human administration.

90. (New) A method according to Claim 1, wherein the first quantity of injectable polarized gaseous ¹²⁹Xe is in a quantity less than about 5 cubic centimeters.

91. (New) A method according to Claim 1, further comprising evaluating the effectiveness of a therapeutic treatment based on the identifying step.

92. (New) A method according to Claim 20, wherein the preparing step is carried out by pressurizing the container with a quantity of CO₂ and then evacuating the container to remove the CO₂ therefrom.

In re: Bastiaan Driehuys et al.
Serial No.: 09/804,369
Filed: March 12, 2001
Page 3

A 4

23 95. (New) A method according to Claim *92*, further comprising repeating the pressurizing and evacuating steps a plurality of times to reduce the amount of oxygen in the container prior to the step of introducing the gaseous polarized ^{129}Xe therein.

24 96. (New) A method according to Claim *13*, further comprising obtaining an MRI ventilation image based on the inhaled polarized gas.

25 95. (New) A method according to Claim *94*, wherein the generating step comprises generating a perfusion image based on the activity of the polarized ^{129}Xe after the injecting step, and further comprising combining the ventilation image with the perfusion image to generate a combination image.

26 96. (New) A method according to Claim *95*, wherein the inhaled polarized gas comprises gaseous ^{129}Xe in a second quantity that is larger than the injected quantity.

27 97. (New) A method according to Claim *94*, further comprising calculating the value of the ratio of the volume versus flow rate of the circulatory system of the subject.

28 98. (New) A method according to Claim *21*, wherein the surfactant introduction is carried out so that the surfactant and ^{129}Xe are injected separately into the subject.

29 99. (New) A method according to Claim *21*, wherein the subject is a human subject, and wherein the surfactant is injected *in vivo* to a human subject after the polarized gaseous ^{129}Xe is injected.

30 100. (New) A method according to Claim *8*, wherein the controlled injection rate is between about 1-5 cc/s.

Sub 101. (New) A method according to Claim 1, wherein the obtaining step is commenced within about 5-25 seconds after the initiation of the injecting step.